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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,332	08/23/2001	Seong-Tack Lee	1567.1019	8125
21171	7590	09/08/2004	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			CLEVELAND, MICHAEL B	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/935,332	<b>Applicant(s)</b> LEE ET AL. <span style="float: right;">9</span>	
	<b>Examiner</b> Michael Cleveland	<b>Art Unit</b> 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 April 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 14-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The examiner has found references to laser beams that define the term "inclination" using units of degrees, but not as used in the specification (i.e., with units of %/micron). The term appears generally to refer to the energy distribution diagram of Fig. 15, but it is not clear what the % and the microns refer to. Accordingly, the term "inclination" as used by Applicant is vague and indefinite.

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 14-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no support for the new limitation of claim 14 of "different inclinations at the respective threshold energy points of the two beams nor the new limitations of claims 15, 17, and 18 that the claimed inclinations are measured at the claimed distance.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-2, 13, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Nirmal et al. (U.S. Patent 6,358,664, hereafter '664).

Claims 1 and 19: '664 teaches a method for fabricating an organic electroluminescent display (col. 2, lines 61-67), comprising the steps of:

forming a first electrode layer of indium tin oxide on a transparent substrate (col. 13, lines 10-15; col. 15, lines 34-41);

forming assistant layers of PEDT/PSS and TPD on the first electrode layer (col. 15, lines 37-55)

forming an organic luminescent layer on the assistant layer by scanning a donor film disposed on the substrate using a laser beam (col. 16, line 55-col. 17, line 13);

removing the donor film (col. 14, line 61-col. 15, line 4); and

forming a second electrode layer on the organic luminescent layer (col. 17, lines 30-40).

Claim 2: The laser beam dithers with respect to an advancing direction of the beam (col. 17, lines 8-10)

Claim 13: The luminescent layer may be based on PPV (col. 16, lines 56-65).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

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claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 3-12 and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nirmal '664, as applied to claim 2, above, and further in view of Littman et al. (U.S. Patent 5,688,551, hereafter '551) and Kwon et al. (U.S. Patent 6,242,140, hereafter '140).

'664 is discussed above. It does not discuss the production of multi-color electroluminescent (EL) devices. However, the construction of multi-color devices by printing multiple colors of electroluminescent material is extremely well known in the art. See, for instance, Littman '551, which teaches that laser thermal transfer of blue, red, and green materials to form electroluminescent devices (col. 5, lines 10-24; Figs. 3a-3c). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the method of '664 to have formed a multicolor device with a reasonable expectation of success because Littman '551 teaches that multicolor EL devices are of interest and may be produced by methods of laser thermal transfer.

Claims 3-4 and 7: '664 is discussed above, but does not explicitly teach that the laser beam is radiated from a singled laser unit. The selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See MPEP 2144.07. '140 teaches that laser beams for thermal transfer printing multi-color areas may be produced from a single laser unit split into a plurality of beams, synchronized to simultaneously dither adjacent patterns (col. 7, lines 5-13). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used such an arrangement as the particular laser arrangement of '664 and '551 because '140 teaches that such arrangements are suitable for forming multi-color areas of electronic devices.

Claim 4: '140 does not explicitly teach splitting the beam into more than two beams. However, col. 7, lines 11-14 indicates that a plurality of split beams may be used, and col. 7, lines 21-23 indicate that a "plurality" is not limited to merely two. Accordingly, it would have

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been obvious to one of ordinary skill in the art at the time the invention was made to have split the beam into more than two beams in order to have formed a greater number of colored areas simultaneously.

Claim 7: The multiple beams may come from multiple lasers (col. 7, lines 14-15).

Claim 5: '140 teaches that at least two laser beams may be radiated from at least two laser units and overlapped (col. 7, lines 21-28) in order to increase the scanning rate by doubling the intensity. This passage indicates only that the intensity is doubled. There is no indication that the energy distribution of the combined beam is different from that of either component beam. Accordingly, it appears that the component beams have identical energy distributions to each other and the overall beam. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used such an arrangement as the particular laser arrangement of '664 and '551 because '140 teaches that such arrangements are suitable for forming multi-color areas of electronic devices.

Claim 6: '140 teaches the pattern may be formed by dithering at least two laser beams from at least two laser units modulated out of phase (col. 7, lines 29-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used such an arrangement as the particular laser arrangement of '664 and '551 because '140 teaches that such arrangements are suitable for forming multi-color areas of electronic devices.

Claims 8-9: The dithering rate should be greater than the scanning (i.e., advancing) rate such as 100-1000 kHz (col. 6, lines 18-20).

Claim 10: The dithering may be in the form of a sine wave (col. 5, lines 62-65).

Claims 11-12: The laser beam may be an elliptical (oval) shape, with the longitudinal direction parallel to the scan direction of about 20-500 microns and lateral diameter of 20-50 microns (col. 6, lines 21-33).

Claims 14-18: '140 teaches forming the laser beam by mixing other laser beams. The intensity distribution of the laser beams is shown in Fig. 6, which appears substantially identical to Applicant's Fig. 15.

#### ***Response to Arguments***

10. Applicant's arguments filed 4/29/2004 have been fully considered but they are not persuasive.

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11. Applicant's arguments that Nirmal is not prior art are unconvincing because Applicant has not perfected the foreign priority by submitting an English foreign priority document.

Even if Applicant perfects foreign priority, and the claims are supported by the foreign priority document, the perfection of foreign priority would not overcome rejections similar to the current rejections, based on Wolk (U.S. Patent 6,114,008), which has analogous teachings to those of Nirmal regarding laser deposition of EL material (col. 13, line 41-30) via scanning (col. 19, lines 20-34).

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wolk (U.S. Patent 6,114,008), which has analogous teachings to those of Nirmal regarding laser deposition of EL material (col. 13, line 41-30) via scanning (col. 19, lines 20-34).

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cleveland whose telephone number is (571) 272-1418. The examiner can normally be reached on Tuesday-Friday and alternate Mon, 8-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (703) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to read "Michael Cleveland". The signature is stylized with a large, looped "M" and a cursive "Cleveland".

Michael Cleveland  
Patent Examiner  
September 2, 2004